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T H E E X T E N S I O N H O R T I C U L T U R I S T

October 1, 1920

Storage of Fruits and Vegetables

American Vegetable Growers' Convention,
Columbus, Ohio.

Among the Extension Workers.

Office of Horticultural and Pomological Investigations
U. S. Department of Agriculture
Washington, D. C.

Saving the Crop

With all the threatened shortage of food there has been an actual surplus especially of fruits and vegetables and the big problem just now is to find some means whereby this surplus can be utilized and saved for winter use. The present situation as regards Irish potatoes, tomatoes and a number of other commodities is not unusual but follows the rule that whenever we have extremely high prices at planting time a surplus and low prices prevail at harvesting time. The problem confronting horticultural extension forces is to secure the adoption of methods that will save the crops to the best advantage.

We do not believe it would be a good policy to advocate federal, state or municipal ownership of storage facilities but we do believe that a great work can be done in assisting communities, manufacturing establishments, apartment house owners and groups of consumers generally to provide suitable storage facilities so that they may be enabled to purchase in carload or other large lots at wholesale prices and to store the products safely until needed for use. One objection to the purchase of large quantities of fruits or vegetables is the fact that so great a percentage spoils before it can be used and this practice is not in our judgment to be advocated unless suitable storage facilities are provided.

Just at present there is a rather large apple crop throughout the northern and eastern states. Already quantities of fruit are going to waste. There is need of a concerted movement to care for the surplus. The present shortage and high price of apple barrels, baskets and other containers have added to the difficulty. While there is a general prejudice against the use of second-hand barrels or other containers we can see no reason why these should not be purchased from dealers at a reasonable price and used for the handling and storage of fruit that is not intended for the general market. Furthermore winter varieties of apples can be transported in bulk in box cars and if properly handled and suitable storage is provided, they will reach the consumer in good condition. Handling in bulk is as a rule preferable to the use of sacks.

As mentioned in our last issue the State of Massachusetts now has a project on the conservation and storage of horticultural products. Other states are interested in the matter and we will be glad to give all possible information upon the methods used. In Massachusetts it is the plan to work with manufacturing concerns, apartment house owners and organized communities in the establishment of storage facilities for both fruits and vegetables.

The purchase in carload lots of potatoes, apples and

similar products at harvesting time will not only give the consumer the benefit of prevailing prices but will greatly relieve transportation conditions later when weather conditions are unfavorable. With the present development of motor truck transportation the products can often be hauled 30 or 40 miles across country and placed in storage without any rail transportation whatever. By this method one handling only is necessary. Farmers' Bulletin No. 879, entitled The Home Storage of Vegetables, gives information on the storage of a large number of vegetables. In several of the states publications along this line have been issued but it is believed that before the full benefit of the community storage proposition can be realized it will be necessary to conduct more or less of a campaign to popularize this type of conservation.

With the present surplus of apples more people should be induced to make old-fashioned open-kettle apple butter. Where sweet cider can be secured for boiling with the apples very little sugar will be required. A trip through a number of the northern and eastern states within the past few days emphasizes the fact that thousands of bushels of apples are now lying on the ground and going to waste. Something should be done immediately to make use of as large a percentage of these as possible. In addition to making apple butter considerable quantities of these apples might be canned without sugar and sweetened later when the canned product is needed for use as apple sauce or as filler for pies.

Community storage has passed the experimental stage. For example, at Lake Forest, Illinois, a storage enterprise of this character has been in use for about three years and has given perfect satisfaction. In a number of cases cold storage space has been rented from the ice factories. The rush of the ice season is now over and the ice storage chambers are being emptied. These might be used for the storage of apples, potatoes, cabbage and root crops. The adaptation of existing cellars, and the use of temporarily constructed outdoor pits is also advocated wherever the work can be handled by persons who understand the storing of fruits and vegetables in this manner and where the weather does not become so cold as to endanger the contents of the pits. The extension force of Purdue University at Lafayette, Indiana, have done some splendid work in demonstrating at fairs and elsewhere the proper methods for the construction of outdoor storage pits.

Meeting of the American Vegetable Growers' Assn.

A number of our state horticultural extension workers attended the meeting of the Vegetable Growers' Association at Columbus, Ohio, August 25 to 28, inclusive. On the whole this



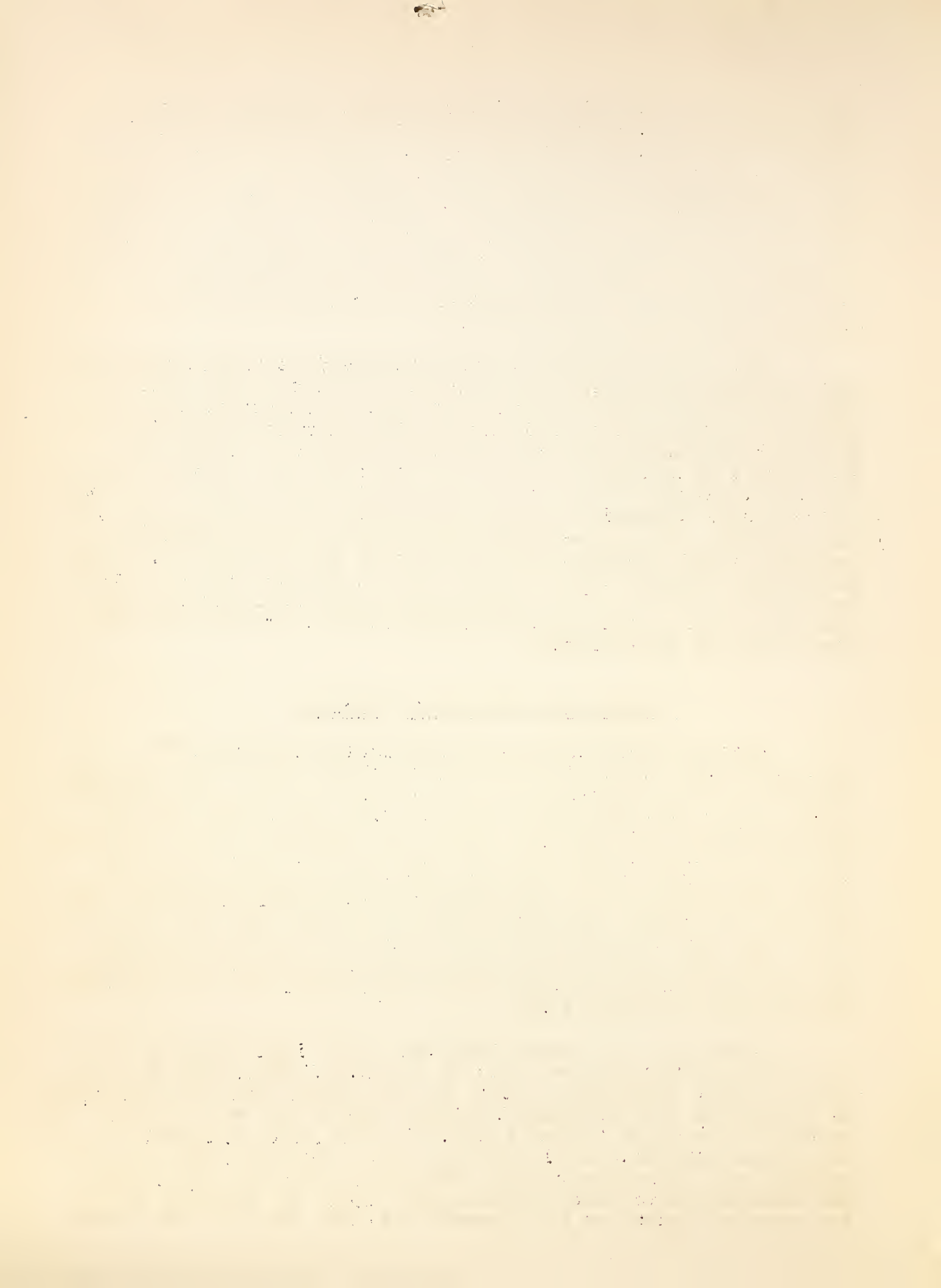
was one of the best and most interesting meetings of the vegetable growers that has ever been held and many sidelights upon the needs of the growers and the work that may be undertaken by the horticultural extension forces were brought out. The labor situation is still acute especially among those who are operating on a large scale. The fuel problem is perhaps of greatest concern with the greenhouse men although marketing problems are a close second. During the convention there was a little talk of overproduction but in most cases this has not proved serious and is the result of the rapid maturity of crops or inadequate distribution.

One of the important topics discussed at the convention was the advisability of affiliating the work of the Association with that of the federated and state farm bureaus. The object of such affiliation is not with a view to dispensing with the Vegetable Growers' Association but to secure the assistance of the business organization of the farm bureaus for the solution of the many legal and financial problems that confront the Association and its members. In other words, it was the idea of the members of the Association to secure the benefit of the business organization of the farm bureaus. The matter was finally left in the hands of the executive committee with instructions that they confer with the officers of the federated and state farm bureaus with a view to working out a plan of affiliation.

Among the Extension Workers

During the week following the Vegetable Growers' Convention Mr. Beattie visited some of the demonstration work with potatoes in northern Indiana which is under the direction of Mr. F. C. Gaylord, Purdue University. This work started with bin selection of seed, this being followed the second year by mass hill selection and the third year by individual hill selection. Along with the selection work the potatoes are being carefully culled and treated for disease prevention. In some of the fields the results are so marked that the sections grown from the selected seed could be readily distinguished by the increased growth of vine. The seed produced on these demonstrations will be distributed to growers in the neighborhood for use as stock seed.

Two days were spent with Mr. C. W. Waid looking over his potato demonstration work in Michigan. The first day, at Grand Rapids, included a visit to the Graham Experimental Farm, an adjunct to the Experiment Station which has been established within a few miles of Grand Rapids. This farm is primarily for fruit investigations although some vegetable work is being carried on. The Grand Rapids Vegetable Growers' Association has established a sales organization which is handling all of the products grown by its members. At the time of the visit



the association was shipping three to four cars a day, mainly of fruits, in addition to supplying the local demand.

The second day was spent around Petoskey, Emmet County, Michigan, visiting the potato fields grown from selected seed and which are being culled for certification. The product of these fields will be used entirely as seed stock by the members of the local branch of the Potato Growers' Association. In the two years that this work has been under way great progress in the improvement of the potato seed stock of Emmet County has been secured.

Mr. Waid is devoting his time primarily to the improvement of the potato crop in Michigan and the results that are being secured fully justify this procedure, and emphasize the importance of undertaking a few things only and doing them well.

During the period from August 3 to 20, Prof. Close visited Wisconsin, Minnesota, North Dakota, and South Dakota. In Wisconsin considerable work is being done by way of farmstead improvement demonstrations under the direction of Prof. Aust. The plan is to locate 4 demonstrations in each county, these to include different conditions and methods of treatment.

The pomological extension work in Wisconsin is under the direction of Mr. F. R. Gifford. He is a New Englander, spent two years in Massachusetts Agricultural College and has been employed for varying periods in some of the largest commercial orchards in New England. On April 1st last, he began extension work in Wisconsin and is meeting with success. Very little pruning was done but spraying demonstrations with follow-up work were started. One interesting development in the care of home orchards in Wisconsin is cooperative spraying. One group of 8 men in Grant County contributed \$25 each to buy a spray outfit which is used by the various members of the group. Several such groups have been formed.

In Minnesota, Prof. Alderman and Prof. Mackintosh are doing some excellent work in the breeding of special varieties of plums that will withstand the severe winters of the Great Plains section. Splendid results are being achieved in this work which is being conducted at the fruit breeding station near St. Paul. Prof. Mackintosh was handicapped in his extension work the present year through illness but has made good progress in the preparation of publicity matter and in organizing for the purchase of spray material through the Iowa Fruit Growers' Association. Under this arrangement fruit growers, county agents and others are induced to join the association, thus obtaining the privilege of ordering spray materials and equipment through the association at a



saving. Pruning and spraying demonstration work is being conducted in a large number of orchards by Prof. Mackintosh.

Prof. Mackintosh has been especially active in the promotion of home gardens and home fruit plantings. Some of this work is done in cooperation with manufacturing concerns who offer prizes to their employees for the best gardens. One feature of this work is the annual garden meeting held in St. Paul during the early springtime of each year.

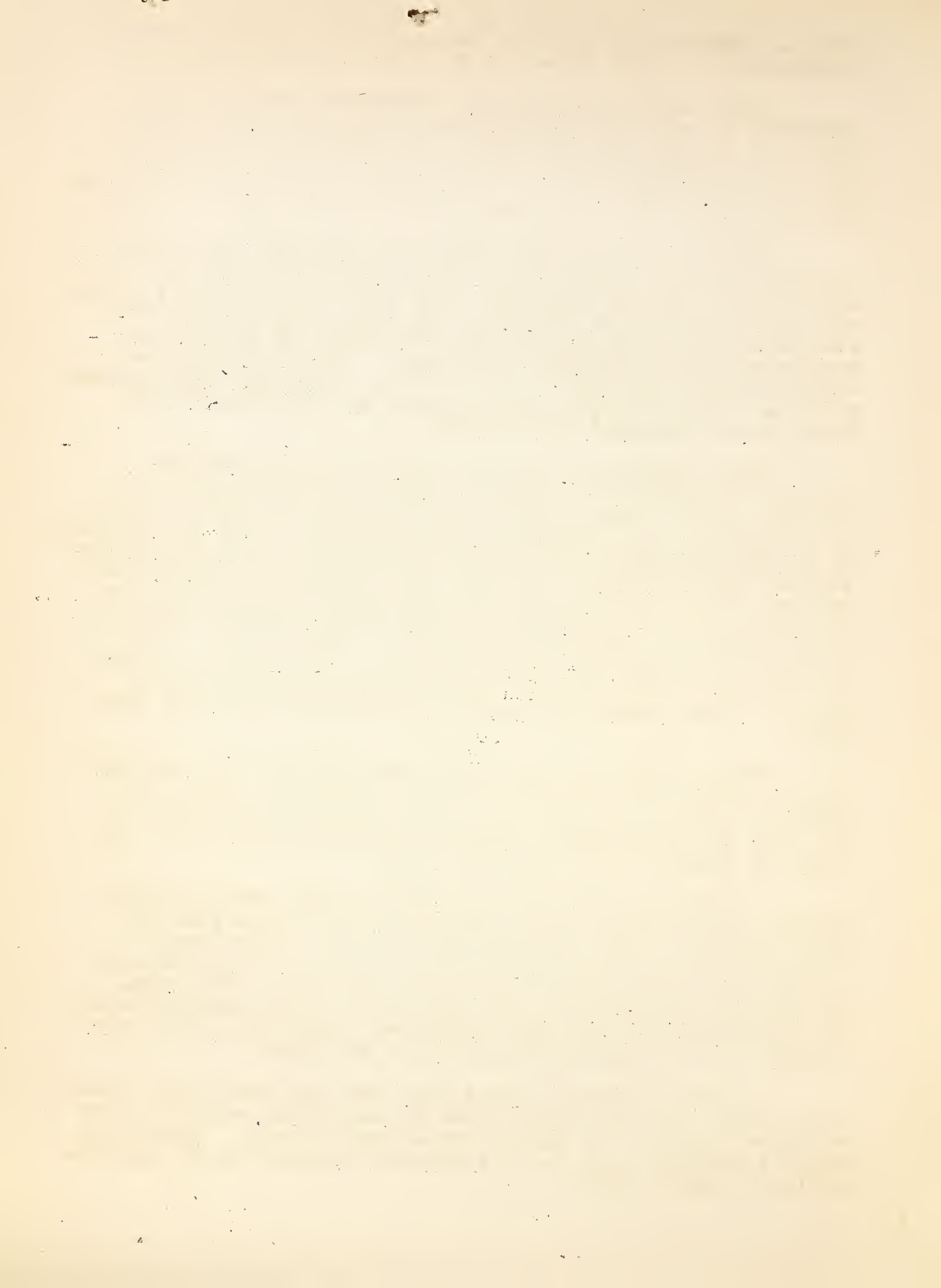
In South Dakota Prof. McCall is handling the horticultural extension work and is concentrating on the improvement of the Irish potato crop. 116 demonstrations were given the past year with an attendance of 2304 people. 30 demonstrations were given in bin seed selection and 12 in seed treatment for the control of disease. 24 field selection demonstrations were also given. Three potato growers' associations have been formed. Prof. McCall is secretary of the State Potato Growers' Association.

Prof. McCall has been of great assistance to the growers in marketing potatoes and has been instrumental in bringing about a much better system of loading cars. He has endeavored to have potatoes graded according to U. S. standards. He is also assisting the growers in the purchase and application of spray materials for the control of potato blight and insects. Twenty potato growers were assisted last year in the production of certified seed potatoes, a market for over 5,000 bushels of certified seed having been found. Cost accounts are being kept by 10 potato growers having a total of 270 acres. This feature will be continued for several years. Four cooperative potato warehouses were built this fall.

Prof. McCall is also doing considerable work in farmstead planting and improvement demonstrations. This work includes furnishing lists of shrubs and trees suitable for the work in South Dakota. Several demonstrations as to the value of shelter belts are under way.

Another feature of the horticultural demonstration work of South Dakota is the planting of one-acre farm and fruit gardens. This demonstration has been exceedingly successful and 22 new gardens were planted in the irrigated section and 28 in other sections of the state, this year. The average net value of the products of these gardens before the demonstration work was started was about \$51, while the average on the demonstration gardens was \$282.

A small amount of fruit club work has been done, there being about 200 strawberry clubs in connection with the consolidated schools and agricultural high schools. Throughout country visited there is an increased interest in the organization of fruit clubs.



Mr. Mulford has just returned from a trip to Arkansas, Oklahoma, Kentucky and Florida in the interest of farmstead improvement work. In Arkansas, Oklahoma and Florida he attended state meetings of home demonstration agents. In Oklahoma Mr. Mulford attended the meeting of the Farm Women's Congress. In Oklahoma Mr. Christian Jensen, landscape gardener at the college, is assisting in local demonstrations in farmstead improvement. Throughout the South the farmstead improvement work is being done mainly through the cooperation of the home demonstration agents. The general subject of extension methods in connection with farmstead improvement will be treated in a subsequent issue.

VIRGINIA FRUIT GROWERS TOUR

G. S. Ralston, Horticulturist, Virginia Extension Division

About one hundred and sixty-five fruit growers of Virginia made an automobile tour of the fruit section of the state, August 10-13 inclusive. This trip was made under the direction of the Extension Division of the Agricultural College and the State Horticultural Society, and the territory covered included the Counties of Augusta, Rockingham, Shenandoah, and Frederick in Virginia, and Berkley County in West Virginia.

The trip was an expression of the interest the growers are taking in advancing Virginia horticulture and their desire to study the most up-to-date methods and handling of the fruit and other problems incident to successful fruit production. Special attention was given to cultural practices, fertilization, variety studies and variety adaptation, pruning practices and results, diseases and their control, methods of handling fruit from the tree to the storage or station, including grading and packing, labor organization and housing of labor, packing equipment, local and community storehouses, production cost, orchard accounting, etc. In addition the growers discussed such subjects as standardization of the packing and other subjects which are prominent in the minds of horticulturists at the present time.

A notable feature of the trip was the discussion each day by three or more fruit growers of noteworthy practices, found in their own orchards. Such talks always led to general discussions which only closed when the time limit was reached. This gave the visitors an opportunity to secure first-hand knowledge of the facts which appealed most strongly to them.

Among the outstanding observations of the trip was the wonderful improvement in cultural practices brought about by the use of the tractor and heavy disc. Unquestionably culture value is greatly enhanced by these means. Closely



related to cultivation results, and of almost equal importance, is the use of quickly available nitrogenous fertilizers. It is said that over 700 tons of this type of fertilizer were used on Valley orchards this year.

Another feature of considerable comment is the most excellent quality of the fruit this year following the poorest production of 1919. Many factors no doubt contribute, among which the climatic conditions are not the least. However, the rather unusual freedom from parasitic troubles and the frequent appearance of high-power spray outfits and their frequent use as attested by the owners, help to explain the reason "why" of the high quality fruit and excellent foliage.

Much less injury from cedar rust than in 1919 led to interesting discussions of organization work for eradication of cedars in Frederick County and portions of Augusta and Rockingham. The large crop of high grade fruit in Frederick County shows the splendid results of organized effort. One cannot help but compare the current season's crop with that of 1919 and note the fine foliage of this year as he remembers the orange color orchards prevalent last season. He is led to wonder what the loss would have been without the removal of cedars when he has just seen even worse infection than occurred the previous year in the district where the cedars still stand.

A large cooperative storage house is an unusual sight but when located close to one of slightly less capacity, the two housing close to 450,000 barrels, gave the visitors an idea as to the scope of the fruit industry in the northern end of the state.

The tour began at Fishersville, Augusta County, August 10th, and ended Friday, August 13th, at Inwood, W.Va. The orchards visited were among the best in the Valley of Virginia and were selected because of the opportunity they afforded the growers to study at first hand the many problems now confronting them. The community packing house at Inwood was of particular interest and the men in charge there gave detailed talks on modern packing equipment and community packing.

